

NEW RECORD OF THE GENUS MITCHELLANIA WRAY FROM CHINA (COLLEMBOLA, HYPOGASTRURIDAE) WITH DESCRIPTION OF A NEW SPECIES

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Abstract *Mitchellania anshanensis* sp. nov. is described and illustrated in the present paper, which is the first record of the genus *Mitchellania* from China. The new species is similar to *M. subhorrida* Babenko, 1994 in appearance, however, it can be separated from the latter by body length, tegumentary granules between the p1 setae of Abd., ventral setae on Ant., lateral teeth in claws, lateral sensilla on Th. and Abd., and other features. Holotype and paratypes deposited in Institute of Plant Physiology & Ecology, Shanghai, China.

Key words Collembola, Hypogastruridae, *Mitchellania*, new species, China.

The genus *Mitchellania* was erected by Wray in 1953 with *M. hirsuta* as type species, which is a small genus of the family Hypogastruridae and only 15 species have been described all over the world so far (Christiansen, 2006). The genus can be distinguished from other genera by the following characteristics: 1) head with 8 + 8 ommatidia; 2) postantennal organ with 4 lobes, the two posteriors framing an additional lobe; 3) claws with a well developed empodium; 4) cephalic spines often present; 5) plurichaetosis developed; 6) mandible short with a well developed molar plate, maxillary head with normal lamellae; 7) 2 anal spines (Thibaud et al., 2004). In the present paper, a new species of the genus is reported from China.

Abbreviations used for description after Yosii (1960). Abd. - abdominal segments - ; Ant. - antennal segments - ; Th. - thoracic segments - ; a1, 2, ... - setae 1, 2, ... of the anterior row; m1, 2, ... - setae 1, 2, ... of the middle row; p1, 2, ... - setae 1, 2, ... of the posterior row; c1, 2, ... - cervical setae 1, 2, ... of area occipitalis; d1, 2, ... - dorsal setae 1, 2, ... of area frontalis; sd1, 2, ... - subdorsal setae 1, 2, ... of area frontalis.

Mitchellania anshanensis sp. nov. (Figs. 1-12)

Holotype body length up to 0.80 mm.

Body color in alcohol light yellow, with patches of blue-grey pigment.

Tegumentary granulation very fine and regular, a little stronger on the Abd. and . 15-20 tegumentary granules between the p1 setae of Abd. .

Head with 2 + 2 spines (d5, sd5). 8 + 8 ommatidia (Fig. 1). Postantennal organ with 4 lobes, the two

posteriors framing an additional lobe (Fig. 4). Sensory organ of Ant. consists of 2 microsensilla which are recurved and flanked by two longer and hardly curved guard sensillae. Ant. with an apical bulb, dorsally with 7 sensilla and ventrally with a sensory file of 20-25 short setae, which are curved and knobbed at the apex (Figs. 5-6). Head of the maxillae of the Ceratophysella amata-type (after Fjellberg, 1998).

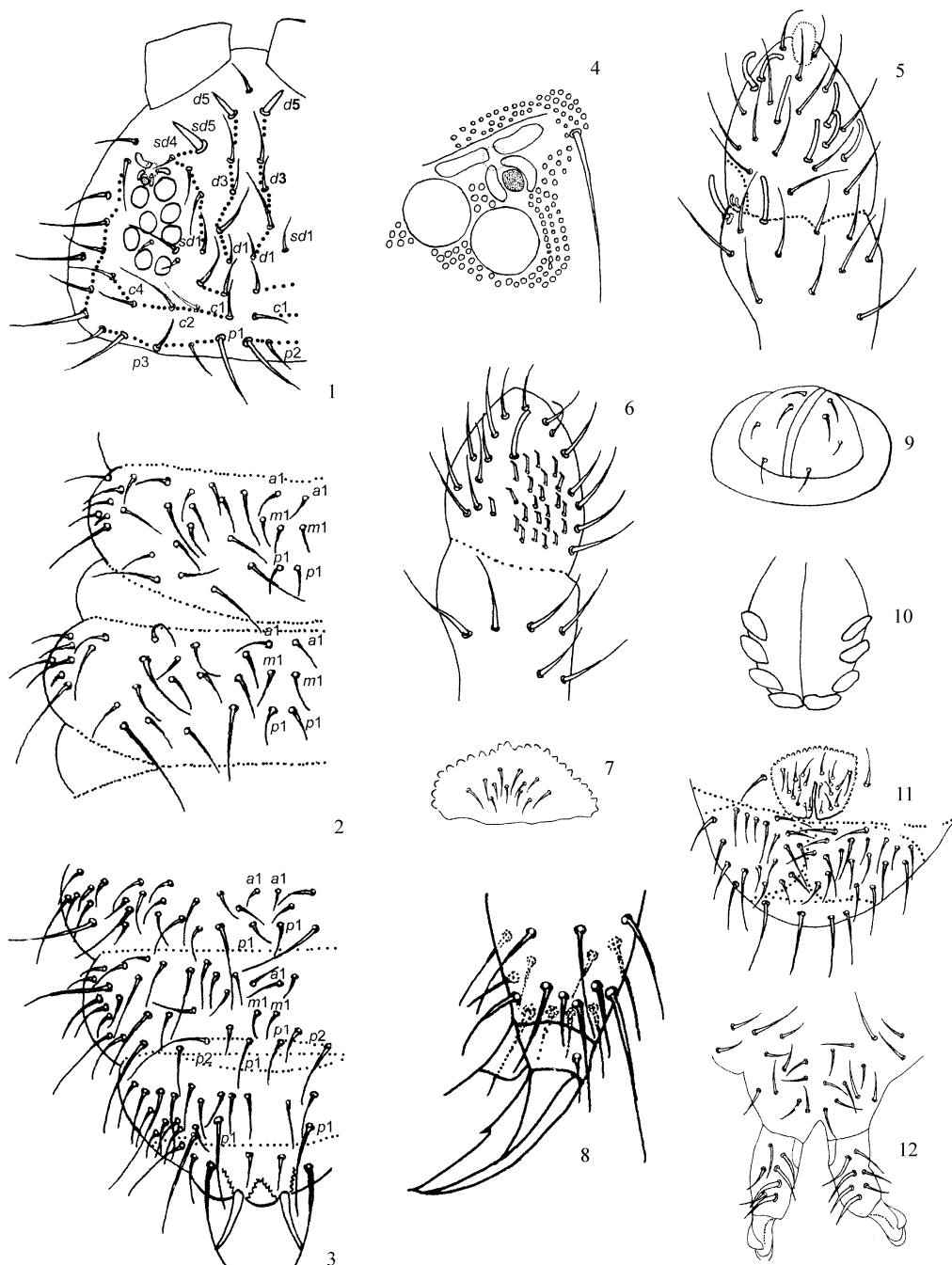
Tibiotarsi - with 19, 19, 18 setae, respectively, and each with a pointed tenent hair. Claw with a clear internal tooth in the middle. Empodium with a basal lamella and a terminal filament which reaches to the internal tooth of the claw (Fig. 8). Retinaculum with 4 + 4 teeth and no seta on the corpus (Fig. 10). Furca well developed. Proportion dens mucro = 2 : 1. Dens with 7 setae, 4 of which are curved and stronger. Mucro spoon-shaped, with a strong external lamella and a roundish apex (Fig. 12). Two anal spines, as long as the inner edge of the claw, curved, born on strong papillae (Fig. 3). Anal plate is presented in Figs. 11. Genital plate is presented in Figs. 7 (female) and Fig. 11 (male).

Chaetotaxy. Setae of the body very slender, smooth, and pointed at the apex. Macro- and mesosetae weakly differentiated. Plurichaetosis well developed (Fig. 2, Fig. 3). On Th. and , lateral sensilla small and fine (Fig. 2). On Abd. - , lateral sensilla of the same length as ordinary setae. On Abd. , seta p1 shorter than p2 (Fig. 3). Ventral tube with 4 + 4 setae (Fig. 9).

Holotype , from the deciduous-conifer mixed forest of Mt. Qian (41°05'N, 123°27'E, alt. 190 m), Anshan City, Liaoning Province, Northeast China,

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Figs. 1-12. *Mitchellania anshanensis* sp. nov. 1. Dorsal chaetotaxy of the head, cephalic spines, and ommatidia. 2. Dorsal chaetotaxy of Th. - . 3. Dorsal chaetotaxy of Abd. - . 4. Postantennal organ, and tegumentary granules. 5. Ant. - , dorsal view. 6. Ant. - , ventral view. 7. Female genital plate. 8. Tibiotarsi with claw. 9. Ventral tube. 10. Retinaculum. 11. Male genital plate, and anal plate. 12. Furca.

collected by Mr. XIE Rong-Dong and Mr. ZHANG Jun. Paratypes: 1, 2, same data as holotype. Holotype and paratypes deposited in Shanghai Institute of Plant Physiology & Ecology.

The new species is easily distinguished from all the known species of the genus *Mitchellania* by the presence of 2 + 2 cephalic spines, anal spines normal, as long as the inner edge of the claw, setae of the body very slender and smooth, rows of very strong spines absent, dorsal setae differentiated, plurichaetosis weakly developed,

claw with an inner tooth and without lateral teeth, ventral tube with 4 + 4 setae, fine and regular tegumentary granulations, and other characters.

Distribution. Presently known only from Anshan City, Liaoning Province, China.

Biology. Unknown.

Etymology. The present species is named after the type locality.

Remarks. This species is closely similar to *M. subhorrida* Babenko, 1994, from Southern Siberia,

Russia, which was collected in litter of a birch plantation (Babenko et al. , 1994) , but the new species distinctly differs from *M. subhorrida* by body length , smaller than *M. subhorrida* , Abd. with 15-20 tegumentary granules between the p1 setae , and *M. subhorrida* only having 8-10 , Ant. ventrally with a sensory file of 20-25 short setae , however , *M. subhorrida* up to 30-35 , claws only with an internal tooth and without lateral teeth , but *M. subhorrida* with an internal tooth and a lateral tooth. In addition , a further difference is about the lateral sensilla on Th. - , and on Abd. - , to *Mitchellania anshanensis* sp. nov. , on Th. and , lateral sensilla small and fine. on Abd. - , lateral sensilla of the same length as ordinary setae , and to *M. subhorrida* , on Th. , Abd. and lateral sensilla of the same length as ordinary setae , on Th. and Abd. lateral sensilla smaller and wider.

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米氏球角跳属中国新纪录及一新种（弹尾目，球角跳科）

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摘 要 报道了球角跳科在中国的 1 新纪录属“米氏球角跳属”，并描述了 1 新种，新种命名为鞍山米氏球角跳 *Mitchellania anshanensis* sp. nov. 鞍山米氏球角跳与描述自西伯利亚的 *M. subhorrida* Babenko , 1994 相似，两者的主要区别在于：新种体长仅 0.8 mm，腹部第 5 节背面 p1 毛之间体表颗粒数量为 17~20，触角第 4 节腹面有 20~25 个弯曲且顶端膨大的短小感觉毛，爪部生有 1 内齿，但无侧齿，胸部第 2 和第 3 节背面感觉毛短小精巧，腹部第 1~3 节背面感觉毛与普

通刚毛长度相同；*M. subhorrida* 体长达到 1.5 mm，腹部第 5 节背面 p1 毛之间体表颗粒数量为 8~10，触角第 4 节腹面弯曲且顶端膨大的短小感觉毛数量范围为 30~35 个，爪部生有 1 内齿和 1 侧齿，胸部第 2 节、腹部第 1~3 节背面感觉毛与普通刚毛长度相同，胸部第 3 节和腹部第 2 节背面感觉毛短小粗壮。模式标本保存在中国科学院上海植物生理生态研究所。

关键词 弹尾目，球角跳科，米氏球角跳属，新种，中国.

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